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### (54) Multiple port register file with interleaved write ports

(57) A high speed register file is provided for use with Very Long Word Instruction (VLIW) and N-way superscaler processors. The high speed register file includes a selected number of copies of a general purpose register (GPR) building block. The GPR building block

includes at least two interleaved sub-banks of registers. Each of the sub-banks includes a number N of write ports and a number M of read ports. The sub-banks are interleaved by write ports and have non-interleaved read ports.

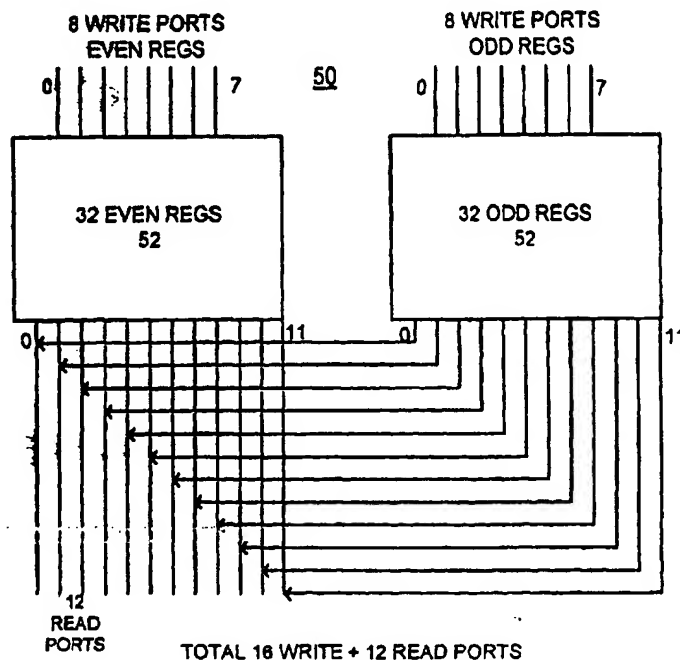


FIG.1

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# EUROPEAN SEARCH REPORT

Application Number  
EP 96 48 0056

| DOCUMENTS CONSIDERED TO BE RELEVANT   |  |  |  |
|---|--|--|--|
| Category  | Citation of document with indication, where appropriate, of relevant passages  | Relevant to claim  | CLASSIFICATION OF THE APPLICATION (InCL.6) |
| A   | EP 0 325 310 A (PHILIPS NV)<br>26 July 1989 (1989-07-26)<br>* column 7, line 51 - column 8, line 32 *<br>---   | 1,8  | G06F9/30<br>G06F9/38                       |
| A   | US 5 392 411 A (OZAKI SHINJI)<br>21 February 1995 (1995-02-21)<br>* column 4, line 53 - column 7, line 46;<br>figures 2,3 *<br>---   | 1,2,5,7  |  |
| A   | PATENT ABSTRACTS OF JAPAN<br>vol. 017, no. 692 (P-1663),<br>17 December 1993 (1993-12-17)<br>& JP 05 233281 A (TOSHIBA CORP),<br>10 September 1993 (1993-09-10)<br>* abstract *<br>----- | 1,3,4,9  |  |
|   |  |  | TECHNICAL FIELDS<br>SEARCHED (Int.Cl.6)    |
|   |  |  | G06F                                       |
| The present search report has been drawn up for all claims  |  |  |  |
| Place of search<br><b>THE HAGUE</b>   |  | Date of completion of the search<br><b>30 November 2000</b>  | Examiner<br><b>Daskalak1s, T</b>           |
| CATEGORY OF CITED DOCUMENTS   |  | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>O : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |  |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |  |  |  |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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The members are as contained in the European Patent Office EDP file on  
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30-11-2000

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